

IN THE CLAIMS:

All claims currently pending and under consideration in the referenced application are included herein. Claims 1, 2, 4-11, 13-20, 22-30, 32-38, 40, and 41 are amended herein. Claim 39 is withdrawn. Claims 3, 12, 21, 31 are cancelled herein. Claims 42 and 43 have been added herein. Please enter these claims as amended. This listing of claims will replace all prior versions and listing of claims in the application.

Listing of the Claims:

1. (Currently amended) A method for expressing in a plant a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than ~~wild-type~~ a wild-type glycerol-3-phosphate dehydrogenase of the plant, the method comprising the steps of: providing a vector comprising a DNA sequence encoding a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than ~~wild-type~~ the wild-type glycerol-3-phosphate dehydrogenase of the plant; and transforming the plant with the vector.

2. (Currently amended) ~~—A—~~ The method according to claim 1, wherein the heterologous glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, the heterologous glycerol-3-phosphate dehydrogenase feedback-defective, while not significantly altering its the catalytic ability of the heterologous glycerol-3-phosphate dehydrogenase.

3. (Cancelled)

4. (Currently amended) ~~—A—~~ The method according to claim 1, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO:2.

5. (Currently amended) ~~A~~ The method according to claim 1, claim 4, wherein the DNA sequence ~~encoding the glycerol-3-phosphate dehydrogenase~~ comprises the nucleotide sequence listed in SEQ ID NO:1.

6. (Currently amended) ~~A~~ The method according to claim 1, wherein the heterologous glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO:2.

7. (Currently amended) ~~A~~ The method according to claim 1, wherein the plant is an ~~oilseed bearing plant~~ oil seed-bearing plant selected from the group consisting of *Borago officinalis*, *Brassica campestris*, *Brassica napus*, *Brassica rapa*, *Cannabis sativa*, *Carthamus tinctorius*, *Cocos nucifera*, *Crambe abyssinica*, *Cuphea* species, *Elaeis guinensis*, *Elaeis oleifera*, *Glycine max*, *Gossypium hirsutum*, *Gossypium barbadense*, *Gossypium herbaceum*, *Helianthus annuus*, *Linum usitatissimum*, *Oenothera biennis*, *Olea europaea*, *Oryza sativa*, *Ricinus communis*, *Sesamum indicum*, *Soja max*, *Triticum* species and *Zea mays*.

8. (Currently amended) ~~A~~ The method according to claim 1, wherein the plant is of the genus *Brassica*.

9. (Currently amended) ~~A~~ The method according to claim 1, wherein the plant is *Arabidopsis thaliana*.

10. (Currently amended) A plant expressing a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than ~~wild-type~~ a wild-type glycerol-3-phosphate dehydrogenase of the plant.

11. (Currently amended) ~~—A—~~ The plant according to claim 10, wherein the heterologous glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders it feedback defective, the heterologous glycerol-3-phosphate dehydrogenase feedback-defective, while not significantly altering its the catalytic ability of the heterologous glycerol-3-phosphate dehydrogenase.

12. (Cancelled)

13. (Currently amended) ~~—A—~~ The plant according to claim 10, wherein the plant harbours comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO:2.

14. (Currently amended) ~~—A—~~ The plant according to ~~claim 10,~~ claim 13, wherein the plant harbours comprises a DNA sequence as listed in SEQ ID NO:1.

15. (Currently amended) ~~—A—~~ The plant according to claim 10, wherein the heterologous glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO:2.

16. (Currently amended) ~~—A—~~ The plant according to claim 10, wherein the plant is an oil-seed bearing seed-bearing plant selected from the group consisting of *Borago officinalis*, *Brassica campestris*, *Brassica napus*, *Brassica rapa*, *Cannabis sativa*, *Carthamus tinctorius*, *Cocos nucifera*, *Crambe abyssinica*, *Cuphea species*, *Elaeis guinensis*, *Elaeis oleifera*, *Glycine max*, *Gossypium hirsutum*, *Gossypium barbadense*, *Gossypium herbaceum*, *Helianthus annuus*, *Linum usitatissimum*, *Oenothera biennis*, *Olea europaea*, *Oryza sativa*, *Ricinus communis*, *Sesamum indicum*, *Soja max*, *Triticum species* and *Zea mays*.

17. (Currently amended) ~~—A—~~ The plant according to claim 10, wherein the plant is of the genus *Brassica*.

18. (Currently amended) ~~A~~ The plant according to claim 10, wherein the plant is *Arabidopsis thaliana*.

19. (Currently amended) A method for producing a genetically altered plant having altered fatty acid content in its glycerolipids, the method comprising the steps of:
providing a vector comprising a DNA sequence encoding a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than ~~wild-type~~ a wild-type glycerol-3-phosphate dehydrogenase of the plant; and
transforming the plant with the vector.

20. (Currently amended) ~~A~~ The method according to claim 19, wherein the heterologous glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders ~~it feedback defective,~~ the heterologous glycerol-3-phosphate dehydrogenase feedback-defective, while not significantly altering ~~its~~ the catalytic ability of the heterologous glycerol-3-phosphate dehydrogenase.

21. (Cancelled)

22. (Currently amended) ~~A~~ The method according to claim 19, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO:2.

23. (Currently amended) ~~A~~ The method according to ~~claim 19,~~ claim 22, wherein the DNA sequence ~~encoding the glycerol-3-phosphate dehydrogenase~~ comprises the nucleotide sequence listed in SEQ ID NO:1.

24. (Currently amended) ~~—A—~~ The method according to claim 19, wherein the heterologous glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO:2.

25. (Currently amended) ~~—A—~~ The method according to claim 19, wherein the plant is an oil-~~seed bearing~~ seed-bearing plant selected from the group consisting of *Borago officinalis*, *Brassica campestris*, *Brassica napus*, *Brassica rapa*, *Cannabis sativa*, *Carthamus tinctorius*, *Cocos nucifera*, *Crambe abyssinica*, *Cuphea* species, *Elaeis guinensis*, *Elaeis oleifera*, *Glycine max*, *Gossypium hirsutum*, *Gossypium barbadense*, *Gossypium herbaceum*, *Helianthus annuus*, *Linum usitatissimum*, *Oenothera biennis*, *Olea europaea*, *Oryza sativa*, *Ricinus communis*, *Sesamum indicum*, *Soja max*, *Triticum* species and *Zea mays*.

26. (Currently amended) ~~—A—~~ The method according to claim 19, wherein the plant is of the genus *Brassica*.

27. (Currently amended) ~~—A—~~ The method according to claim 19, wherein the plant is *Arabidopsis thaliana*.

28. (Currently amended) ~~—A—~~ The method according to claim 19, wherein the plant glycerolipid has elevated levels of C16 fatty acids.

29. (Currently amended) A method for producing a genetically altered plant having increased stress tolerance relative to the ~~wild-type~~, wild-type levels of stress tolerance of the plant, the method comprising the steps of:
providing a vector comprising a DNA sequence encoding a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than ~~wild-type~~ a wild-type glycerol-3-phosphate dehydrogenase of the plant; and
transforming the plant with the vector.

30. (Currently amended) ~~—A—~~ The method according to claim 29, wherein the heterologous glycerol-3-phosphate dehydrogenase has a single amino acid substitution which renders ~~it feedback defective,~~ the heterologous glycerol-3-phosphate dehydrogenase feedback-defective, while not significantly altering ~~its~~ the catalytic ability of the heterologous glycerol-3-phosphate dehydrogenase.

31. (Cancelled)

32. (Currently amended) ~~—A—~~ The method according to claim 29, wherein the DNA sequence comprises a DNA sequence encoding the amino acid sequence listed in SEQ ID NO:2.

33. (Currently amended) ~~—A—~~ The method according to ~~claim 29,~~ claim 32, wherein the DNA sequence encoding the heterologous glycerol-3-phosphate dehydrogenase comprises the sequence listed in SEQ ID NO. 1.

34. (Currently amended) ~~—A—~~ The method according to claim 29, wherein the heterologous glycerol-3-phosphate dehydrogenase has the amino acid sequence listed in SEQ ID NO:2.

35. (Currently amended) ~~—A—~~ The method according to claim 29, wherein the plant is an oil-seed-bearing ~~seed-bearing~~ seed-bearing plant selected from the group consisting of *Borago officinalis*, *Brassica campestris*, *Brassica napus*, *Brassica rapa*, *Cannabis sativa*, *Carthamus tinctorius*, *Cocos nucifera*, *Crambe abyssinica*, *Cuphea* species, *Elaeis guinensis*, *Elaeis oleifera*, *Glycine max*, *Gossypium hirsutum*, *Gossypium barbadense*, *Gossypium herbaceum*, *Helianthus annuus*, *Linum usitatissimum*, *Oenothera biennis*, *Olea europaea*, *Oryza sativa*, *Ricinus communis*, *Sesamum indicum*, *Soja max*, *Triticum* species and *Zea mays*.

36. (Currently amended) ~~A~~ The method according to claim 29, wherein the plant is of the genus *Brassica*.

37. (Currently amended) ~~A~~ The method according to claim 29, wherein the plant is *Arabidopsis thaliana*.

38. (Currently amended) ~~A~~ The method according to claim 29, wherein the stress is osmotic stress.

39. (Withdrawn) A vector for genetically transforming a plant, wherein the vector comprises a DNA encoding a protein having glycerol-3-phosphate dehydrogenase activity, and the plant, after transforming, exhibits enhanced biosynthesis of glycerol and/or glycerol-3-phosphate.

40. (Currently amended) ~~A~~ The method according to ~~claim 1~~ claim 1, wherein the vector comprises a DNA encoding a protein having glycerol-3-phosphate activity.

41. (Currently amended) ~~A~~ The method according to ~~claim 1~~ claim 1, wherein the transformed plant exhibits enhanced biosynthesis of glycerol and/or glycerol-3-phosphate.

42. (New) A plant or plant progeny expressing a heterologous glycerol-3-phosphate dehydrogenase that is less sensitive to feedback inhibition than a wild-type glycerol-3-phosphate dehydrogenase of the plant, said plant comprising:
the heterologous glycerol-3-phosphate dehydrogenase comprising a DNA sequence encoding an amino acid sequence of SEQ ID NO:2.

43. (New) A transgenic plant or progeny thereof comprising:
a DNA sequence encoding an amino acid sequence of SEQ ID NO:2.